NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
FACT SHEET

(pursuant to NAC 445A.236)

Permittee Name: Nevada Department of Corrections
P.O. Box 7011
Carson City, NV 89702

Permit Number: NEV90053

Location: Lovelock Correctional Center
1200 Prison Road
Lovelock, Nevada 89419
Pershing County, Township 27N, Range 32E, Section 9

Latitude: 40° 13′ 9.2″ N
Longitude: 118° 23′ 43.8″ W

Wellhead Protection Program

The Lovelock Correctional Center discharge area is not within an established wellhead protection capture zone. The facility is not within a 7000 foot buffer around any public water supply well.

General:

The Nevada Department of Corrections operates Lovelock Correctional Center (LCC), located six miles northeast of Lovelock and approximately one mile east of U.S. I-80 via Coal Canyon Road. LCC is a medium-security men's prison, currently housing approximately 1,530 inmates and staffed by 265 employees. The facility received its current groundwater discharge permit on April 2, 1993. Inmates were first admitted to this facility in 1995.

This permit is to be issued with a 0.25 million gallons per day (MGD) flow limit. Influent wastewater (domestic) is first screened and then metered (Parshall Flume) in the treatment headworks. The screened influent is then split evenly for treatment in two HDPE-lined aerated facultative ponds. Each facultative pond is outfitted with two 5 Hp and one 15 Hp aerators, which effect treatment and reduce odor. Per submitted design criteria, the combined area of the aerated ponds at operating capacity is 2.38 acres, with combined storage capacity of 5.9 million gallons (MG), and maximum operating depth in each pond of 10 feet. The effluent from the aerated facultative ponds then discharges to two HDPE-lined secondary (polishing) ponds for further organic (BOD) removal, solids settling, and natural decay of fecal coliform bacteria. The combined area of the polishing ponds is 1.4 acres, combined storage capacity is 1.9 MG, and maximum operating depth in each pond is 5 feet. After polishing, the

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treated effluent is discharged to six rapid infiltration basins (RIB) for percolation to the groundwater. The combined area of the RIBs is 13 acres.

The Division's secondary treatment requirements for ponds discharging effluent to the groundwater are 30 mg/L (30-day average) and 45 mg/L (daily maximum) of CBOD (nitrogen-inhibited BOD_5), and 90 mg/L of Total Suspended Solids (TSS). The treatment facility was designed for an influent BOD_5 strength of 200 mg/L.

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Receiving Water Characteristics:
The receiving water body for treated effluent is groundwater of the State via percolation in six RIBs. In the past, the facility monitor has monitored, on a quarterly basis, two groundwater monitoring wells, which are each located approximately 100 feet downgradient (north) of the RIBs. The wells are screened from 48-73 ft. and 35-60 ft. below ground surface (bgs). In the deeper well, no groundwater was found to a depth of 120 ft. bgs. Well Log No. 35097 indicated that a layer of green clay was found from 60-120 ft. bgs. Well log information from adjoining sections indicates that groundwater is not found above 200 ft. bgs until the topography intersects the Humboldt River, approximately 1.8 miles to the east. Based on the depth to groundwater and the 60 ft. clay layer, additional groundwater wells within 200 ft. of the RIBs would not yield any additional information about potential impacts to groundwater, since the infiltration is retarded before the effluent could reach the aquifer. In addition, the existing wells are not indicative of aquifer quality. Continued groundwater monitoring is waived on the basis that the effluent disposal does not have the potential to significantly impact human health and the environment.

The prison's domestic water is supplied by the Lovelock Meadows System, which also supplies the community needs of Lovelock. The Lovelock Meadows wells are located approximately 12-15 miles northwest of and across the Humboldt River from the prison facility. Groundwater quality below the site is believed to be high in TDS.

Effluent Flow and Characteristics:
During the period from April 2002 through June 2006, the LCC wastewater treatment facility reported the following influent and effluent data:

PARAMETER		AVERAGE	MAXIMUM	MINIMUM
Influent	Flow (MGD)	0.130	1.27	0.001
	CBOD (mg/l)	255	644	65
	TSS (mg/l)	280	552	142
	Ammonia (mg/l)	13.4	22	6.9
	Nitrate as N (mg/l)	0.5	0.6	0.3
	Total Nitrogen (mg/l)	37	70	18
	Inmate Count	1531	1569	1450
Effluent	CBOD (mg/l)	47	122	14
	TSS (mg/l)	83	178	6
	Ammonia (mg/l)	24.7	35	5.1
	Nitrate as N (mg/l)	0.3	0.7	0.1
	Total Nitrogen (mg/l)	39	64	18
	pH (Standard Units)	7.5	8	7

The existing flow limit for this facility is 0.250 MGD, based on treatment of wastewater BOD_5 strength of 200 mg/L. Presently, influent is received at a higher organic strength than specified in the facility design.

Proposed Effluent Limitations and Special Conditions:

The discharge to groundwaters of the State of Nevada from the Lovelock Correctional Center wastewater treatment facility will be limited and monitored according to the following:

Table 1: Plant Discharge Limitations

PARAMETERS		DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
		30-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Influent	Flow (MGD)	0.25	---	Continuous	Flow Meter
	CBOD (mg/l)	Monitor and Report		Monthly	Discrete
	TSS (mg/l)	Monitor and Report		Monthly	Discrete
	Total Nitrogen as N (mg/l)	Monitor and Report		Quarterly	Discrete
	Nitrate as N (mg/l)	Monitor and Report		Quarterly	Discrete
	Ammonia as N (mg/l)	Monitor and Report		Quarterly	Discrete
Effluent	CBOD (mg/l)	30	45	Monthly	Discrete
	TSS (mg/l)	---	90	Monthly	Discrete
	Total Nitrogen as N (mg/l)	Monitor and Report		Quarterly	Discrete
	Nitrate as N (mg/l)	Monitor and Report		Quarterly	Discrete
	Ammonia as N (mg/l)	Monitor and Report		Quarterly	Discrete
	pH (Standard Units)	6.0 to 9.0		Monthly	Discrete
Inmate Population (# of persons)		Monitor and Report		Quarterly	Population Count

TSS = Total Suspended Solids

Influent is defined as raw wastewater flow into the headworks but prior to discharge into the aerated facultative ponds. Effluent is defined as flow from the secondary (polishing) ponds prior to discharge into the rapid infiltration basins.

Schedule of Compliance:

- **By May 1, 2007,** the Permittee will submit for Division review and approval a plan for removal and disposal of sludge removed from the primary and secondary treatment ponds.

- **By June 1, 2007,** the Permittee will submit for Division review and approval a revised Operations and Maintenance (O&M) Manual.

Rationale for Permit Requirements:
The Division's rationale for the proposed monitoring conditions is as follows:

- *Flow*: Flow is tracked to ensure that the design capacity of the treatment ponds is not exceeded and reporting to the Division is made at 85% of the design capacity limit.

- *CBOD*: The Division requires the monthly monitoring of Carbonaceous Biochemical Oxygen Demand (CBOD or Inhibited BOD_5), as an indication of treatment performance in the ponds. The Division's secondary-treatment CBOD standards for pond effluent are 30 mg/L and 45 mg/L for the 30-day average and daily maximum values, respectively.

- *TSS*: The Division's secondary-treatment standard in pond effluent for Total Suspended Solids (TSS) is 90

mg/L.

- *pH*: The Division requires the effluent to meet a pH limitation of between 6.0 and 9.0 standard units.

- *Nitrogen*: Quarterly monitoring of total nitrogen, ammonia, and nitrate, as nitrogen is required to track plant loading and performance.

Procedures for Public Comment:
The Notice of the Division's intent to renew a permit authorizing the facility to discharge secondary-treated effluent into the groundwater, subject to the conditions contained within the permit is being sent to the **Lovelock Review-Miner** and **Reno Gazette-Journal** newspapers for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of thirty (30) days following the date of the public notice. The comment period can be extended at the discretion of the Administrator. The deadline date at the Division for receipt of all comments pertaining to this public notice period is **April 16, 2007 at 5:00 P.M.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons.

The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Proposed Determination:
The Division has made the tentative determination to issue (renew) the proposed groundwater discharge permit for a period of five (5) years.

Prepared by: Janine O. Hartley
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